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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/677,679	10/02/2000	Stephen D Fantone	0205/US	3423

30333 7590 05/22/2003

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LEXINGTON, MA 02421-7025

EXAMINER

SMITH, ZANDRA V

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/677,679

Applicant(s)

FANTONE ET AL.

Examiner

Zandra V. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 22-25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statements filed 16 January 2001 and 14 February 2001 have been considered.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-7, 15-17, and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by *Le Saux et al. (5,581,347)*.

As to **claims 1, 15, and 20**, Le Saux discloses a system for direct measurement of an optical component, comprising:

a support (100) for an element (4) having at least one test surface to be measured;

means (1) for generating an output beam having a predetermined wavefront profile;

means for positioning the output beam with respect to the support such that the predetermined wavefront impinges on the element from a predetermine direction and then is reflected to travel opposite the predetermined direction as a distorted wavefront containing distortions that vary in accordance with the topography of the surface and the position of the output beam; and

means for sampling the distorted wavefront profile at predetermined locations and determining local deformations corresponding to the sampled locations (col. 4, lines 47-59, col. 6, lines 10-35, col. 7, lines 14-18, and col. 9, lines 35-40).

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As to **claims 2-3, 16-17, and 21**, Le Saux discloses everything claimed, as applied above, in addition analytical means for representing the topography of the surface with mathematical approximation comprising a series of coefficients and variables, calculating the value of the coefficients based on the local deformation of the wavefront at at least one position of the source with respect to the surface. In addition the analytical means includes means for performing an optimization analysis using the values of the coefficients to represent the same of the surface (col. 11, line 15-col. 12, line 19).

As to **claim 6**, Le Saux discloses everything claimed, as applied above, in addition a light source and collimating optics are included (col. 7, lines 43-47, col. 8, line 14, figs. 4-5).

As to **claim 7**, Le Saux discloses everything claimed, as applied above, in addition an objective lens is provided (col. 8, lines 41-42).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Le Saux et al* (5,581,347).

As to **claims 4-5**, Le Saux discloses everything claimed, as applied above, with the exception the shape of the wavefront, however it would have been obvious to one having ordinary skill in the art at the time of invention to use a plane or spherical wavefront since the curvature of the wavefront will accommodate for samples of different shapes.

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Claims 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Le Saux et al* (5,581,347) in view of *Bille* (5,062,702).

As to **claim 12**, Le Saux discloses everything claimed, as applied above, with the exception of a two-dimensional lens array, however to do so is well known as taught by Bille. Bille discloses a device for mapping corneal topography using wavefront analysis that includes a two-dimensional lens array (64). It would have been obvious to one having ordinary skill in the art at the time of invention to include a two-dimensional lens array to properly focus light from the surface to the CCD without image shift.

#### ***Allowable Subject Matter***

Claims 8-11, 13-14, 18-19, and 22-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render a positive lens, reflective means positioned with respect to the support, or a beam expansion section, index mismatching material between layers of a lens array, microscope and telescope sections, and a scanning one dimensional photodetector, pulsed light, second degree polynomial, or determining offset.

#### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

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Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-21 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of copending Application No. 09/328972. Although the conflicting claims are not identical, they are not patentably distinct from each other because 09/328972 discloses means for supporting an element, generating an output beam, positioning the beam with respect to the sample and sampling a distorted wavefront, as shown in claims 1, 15, and 20.

As shown in the claims dependent from 1, 15, and 20, 09/328972 discloses the steps of calculating coefficients, using the coefficient to determine surface shape, plane wavefront, spherical wavefront, light source and collimating optics, objective lens, relay section, microscope, two-dimensional lens array and a beam expansion surface.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### ***Fax/Telephone Information***

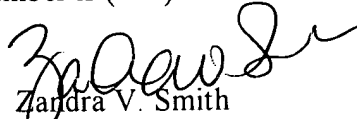
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (703) 305-7776.

The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (703)308-4881. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0530.

  
Zandra V. Smith  
Primary Examiner  
Art Unit 2877

May 15, 2003